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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,413	07/24/2003	Carlos A. Paz de Araujo	13176.431US	9869
24283	7590	09/30/2005	EXAMINER	
PATTON BOGGS 1660 LINCOLN ST SUITE 2050 DENVER, CO 80264			GHYKA, ALEXANDER G	
			ART UNIT	PAPER NUMBER
			2812	

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/626,413	Applicant(s) PAZ DE ARAUJO ET AL.	
	Examiner Alexander G. Ghyka	Art Unit 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-54 and 70-82 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 82 is/are allowed.
- 6) ☒ Claim(s) 1,3-15,17-34,36-54 and 72-81 is/are rejected.
- 7) ☒ Claim(s) 16, 35 and 55 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

ALEXANDER GHYKA
PRIMARY EXAMINER

Av 2812
Alex Ghyka

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Applicants' amendment and response of 7/20/2005 has been considered and entered in the record. The objection of Claim 38 is withdrawn in view of Applicants' amendments. New Claim 82 is allowable for the reasons as cited in the prior art. The following new rejection is made in view of Applicants' amendments and arguments. This Office action is a NON- Final rejection.

Claim Rejections - 35 USC § 112

Claims 72-81 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no basis in the application as claimed for "a thickness not exceeding 250 nm".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-15, 17-34, 36-54 and 70-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al (US 6,506,643).

The present claims generally require a ferroelectric circuit memory comprising a three dimensional capacitor laminate which comprises a bottom electrode, a ferroelectric film and a top electrode, wherein the 3D shape has substantially directional components in three mutually orthogonal planes.

Hsu et al disclose a method for forming a damascene FERAM cell structure which comprises a ferroelectric structure. See the Abstract. Hsu et al disclose a ferroelectric capacitor which comprises a bottom electrode, a ferroelectric film over the bottom electrode and a top electrode. See column 2, lines 40-60. The 3-D shape has substantially directional components in three mutually orthogonal angles. See Figures 1-3. The ferroelectric material is made from superlattice components which comprise niobium and tantalum as required by the afore mentioned claims. See column 4, lines 1-10.. Furthermore, the capacitance area is greater than the capacitor footprint area as required by some of the present claims. See Figure 3. Hsu discloses thicknesses of

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approximately 300 nm for the capacitor laminate and 100 nm for the ferroelectric film.

See column 4, lines 50-58.

Hsu et al differs from the present claims in that it does not disclose the presently claimed thickness of not exceeding 80 nm for the ferroelectric film, and 200 or 300 nm for the capacitor laminate.

It would have been obvious for one of ordinary skill in the art, at the time of the invention, to arrive at the presently claimed thicknesses as a change in size (from approximately 100 nm to 80 nm), would be within the level of skill of one of ordinary skill in the art, for the benefit of storing more memory in less space. Where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device, and a device having the claimed dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. See *Gardner v. TEC Systems Inc* 220 USPQ 777 (Fed. Cir. 1984). Therefore, a *prima facie* case of obviousness is established.

Allowable Subject Matter

Claims 16, 35 and 55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 82 is allowed.

The following is a statement of reasons for the indication of allowable subject matter: The cited prior art does not disclose the hydrogen barrier layer comprising strontium tantalite as required by the present claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander G. Ghyka whose telephone number is (571) 272-1669. The examiner can normally be reached on Monday through Thursday during general business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AGG
September 27, 2005

ALEXANDER GHYKA
PRIMARY EXAMINER

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